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(54) METHOD FOR MANUFACTURING COMPOSITION FOR FILM FORMATION, COMPOSITION FOR FILM FORMATION, METHOD FOR FORMING FILM AND SILICA-BASED FILM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method for manufacturing a composition for forming a film as an interlayer insulating film material for a semiconductor element, or the like, excellent in long-term preservation stability of a solution and capable of giving a silica-based film excellent in relative dielectric constant characteristics and crack resistance after PCT(Pressure Cooker Test).

SOLUTION: The manufacturing method of a composition for forming a film comprises hydrolyzing and condensing (A) at least one compound selected from the group consisting of compounds represented by general formula 1, 2 or 3 in the presence of (B) a basic compound, (C) water and (D) a first organic solvent and subsequently adding thereto (E) an acidic compound: the general formulae $RaSi(OR1)4-a$... (1), $Si(OR2)4$... (2), $R3b(R4O)3-bSi-(R7)d-Si(OR5)3-cR6c$... (3), wherein R is hydrogen or fluorine atom or a monovalent organic group; R1-R6 are each a monovalent organic group; R7 is oxygen atom, a phenylene group or $(CH2)n$; (a) is 1-2; (b) and (c) are each 0-2; (d) is 0 or 1; and (n) is 1-6.

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